Saped March 13. 1828 An Inaugural Eloug On Miasmatal Submitted for the Deque of Doctor of Medicine by For he Tixo Mc levedy of Termsylvanial -San 45th 1828

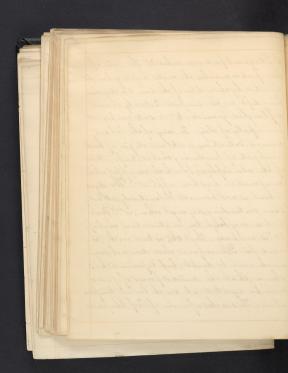
On Miasmata have how, only made a more guy of culted flowers thus brought nothing but the thread that tis them An on-My object in the fresent essay is not to Enter into a minute investigation of the subject of Miasmata, but merely to state the general opini ion with reg and to them I the facts I re asoningsupon which they are founded . To attempt in one, would indeed affect to me an idle of presempter our em dertakting From Eyperiona, Jean Strown nothing, Llo en duly in unmouning speculation is forcign to my habit-Measmata have been various by divided of ar ranged - I shall confine my attention to that Species of miasm which has been by the Stations called Malarid or bad air to Lancisi has been awarded the merit of having first called the attention of the medical world!

to this subjects To his writings in deed we are under led for agreat portion of the information we pol sels concerning their nature of origin. Masmata in the sense I have indicated I I hall define to be to orion whalations from regetably in a state of decay or putrafaction Much I know has been said Levrillen with respect to the power of Justid animal substances of Eliminating pertitential Effluera. there opinions have however been so fully and ably refuted by Prof Chapman in his Thought on Endenied" that it would be morely retracing his steps to attempt any thin of further Concerning the precise nature of masmata, little or nothing is Brown - Various opinions have been offered on the Subject; Some of them plausible indeed, none of them clear or satisfactory- Here the resources of Chemistry, so inestimable on many occasion, have furnished us with no data, on which

to found a rational Explanation of the phenomena which they write in the living System - According to Buthellet the air disengaged from marshy situations is hy drogen hold ing carbon in solution, containing something besides of the nature of an animal oil 3 Vano as quoted by Lancisi supposed the nox ion qualitie, to defend on the Existence of ani in alculy in the Exhal ations - Churchian Langing the observes) is a strenuous supporter of this opinion for he imagined that pois onous spirits or verminous atoms were Exhaled from furtifying bodiesof there inhaled by the breath or absorbed through the poris scattered their venom through the bowels the animal cular nature of malarid Ih are he and in generally & ably advocated by our distinguished Prof of Jungery, in his be. times, so far at least as regards Gellow fever It has also been supposed that those soils which

a Townel de Physique box X & distribute Translation of Lancisi in North

have been termed miasmatic, produce disease by depriving the air of a portion of its orgyen; but this is satisfactorily shown not to be the case from the fact of the Endiometer shewing no difference whatever in the quantity of oxy year between then & the most sale brion situations Moreover Gattani states that in repeated byperiment, he found "the air of the futrid man Thes of fort Frentis two degrees funer than the air at the summit of mount Legnond which is always covered with provo tis Elevated above the sea 8646 /10 Get although we Know so little of their nature, the circumstances under which they one generated have bain fretty clearly as certained To their for mation Heat IM orture are a sentially mece say, I the circumstances under which they are produced may be classed under your heads -



10 Itagnant pools or marshes 20 The sites of these pools or marshes, the water having been dif sipated by the action of the sun I a dry out being left on the sunface-3 Newly cleared or ploughed grounds - 4" a soil composed principally of day - In any of the above named situations a certain de que of heat is capable of producing that distemperature of the atmosphere, to which the appel ation miasmatic, has been applied - The degree of heat is not however definitively settled Some contending, amongst whom, is Fiftush that a very knigh temperature, Even that of St is necepary - That this is true, with regand to Gelow fever, there does not seem much room to doubte; but Experience has shown that the milder forms of fever. may be excited at much lower tempers atures - This is the opinion of Crof Chapman

The truth of which, he establishes, by the simple fact of putrefaction taking place at much lower lemperature, than 80 ? The virtence and malignancy of the fever appears to defend very much if not Entirely upon the degree of heal, as is Everaplified in the fevers of tropical climates proving more fatalihan those of cold or temperate situations - Yet though heat be Essential to the formation of noxion, ashalations, when Excepive & uncombined with moisture, the putiefactive process prevented from going on. This fact is observed in the interior of Africa. where camelo having died in their journey through the desorts never putiefy, the morstine being so rapidly carried off by the heated atmosphere. The same ching is said by travellers to occur in the hotter of more sandy parts of South America - Heat

therefore it affects is of itself insufficient to produce those dreadful affects which have been attributed to it, unless when a cting thros ugh the medium of a moist atmosphere. But it has been justly remarked by Pringle that we must distinguish be tween morsh & cainy seasons; for in marshy grounds to truce I continued heat from without rain occasion the greatest moisture, by the Exhalation, which they raise & support in the atmosphere. where as prequent showers during the hot sea-Son, cool the air, check the use of the vapours, delute + refresh the corrupted waters Lind state, that in Juinea, which has has properly but two seasons, the wet & the dry; the rainy is the season of sickness. whereas for many months in the dry season most parts of the country are Equally healthy & pleasant with any in the world,

and even the woods and moralses are tol erably he althy - Again he adds. I am infor med by a sin ye on who practised some time in Jene gal that for several months during the dry se ason, the country was as he althy and as pleasant as any in the world; but I on after the rainy season began, a low malignantifemer appeared which constantly spread itself amongst the Europeand Directly the reverse of this according to Heustis happens at New Orleans - Saamy Deason in New Orleanshe Daysis always a he althy one by Reeping the ponds filled with water; whilst it had a contrary Effect whom the country gener ally - This he attitude, to the circum stance of the taken and de composition of the subjacent matter being prevented by the wordy of water which keeps it at a temperature below that necessary for a specdy decomposition_ But in the latter instance

as soon as the water shall have in Some degree died up the Evolution of the mias me commen ces". It has been already remarked that the site, of pools or marshes, the water having been disipated by the action of the sun fitty out being left on the surface are capable of Elimi nating noxious Effluria - This might at first sight appear to be in contradiction to the gener al proportion that moisture is as Epontially neapary to their formation: but a short Examination will suffice to show that it is in perfect accordance with what has been ad vanced The soil though dry on the senface is moist herealt dupon Examination this ourst will not be found to extend further chance few inches below the sentace, where the soil will be found to consist principally of decay. ing regetable materials, the "whalations from which find a ready outlet, through innumerable

or Theusty in Endering of Southern states - p 22

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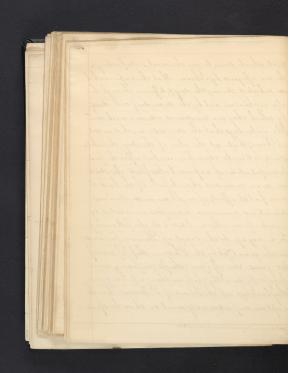
ciacks in the cust above, and as might

reasonably be expected in a highly/ concentrated form The Escape of these gases is much facilitated by the very circumstances, thaty present their escape in those situations where water already Exists I allude to be quent showers; which by softening the ground fermit their locake in longer quantities - Pringle, Speaking of the discuses of Handers, Days, rain falling in a dry season when the ground has been parched up by intense heat, so far from refreshing & punifying the dir loads it with the most furtiferous miasmata" - From what has been Said it will larily be understood how newly cleared or ploughed grounds for o duce fevers. In the first case where lunash are been newly cleared, vegetable matter, as plants leaves roots to in a state of deary which had previously been protected by trees from the influence of the

Sen, being Exposed to the immediate action of its rays, putrefaction of consequently the climenation of un wholesome what ating hatter place In the Le cond instance, the de composition which has been going on subternancously is prevented from de playing it, Efects; but as Ion as an outlet is afforded by ploughing) or digging, to the Eflurid generated & the Ext pored can't being subsequently left to be acted on by the solar influence the same consequence, result as alkeady described - I have mentioned another situation favorable to the produce tion of this poison, oug, a soil composed frien cipally of clay This fact was first pointed out by Lin nows, who goes so far as to af sent that it originated in all places where clay abounded I only in such places. He supposed that the particles of clay being dipoliced in the water drank by the inhabitants of

the water no celeany with deem portion of heir provad on very much increased charmen

that which seems to me the most satisfactory's the one assigned by Johnson That the waponiswhich are Enhaled during the day & diffused through the alm or phere are met by the descending cool dews, by which they are condensed of descend with them De Liste Says that the deer is so much dreaded at Nome, that at the close of the day, the inhabit and retire to their houses; but after the first precipitation of rapour takes place, the strats are more crouded chan beford by the bad & even fat al effects of might air in malarious Dituations numerous Examples are related by Lind from whom I whach the following In a voyage to the coast of Guinea performed in the year 1766 by the Phain ship of war of 40 guns; the officers of ships company were presently he althy; till on their return home they Lonched at the Island of I Thomas - How the captain unfortunately went on shore to spend



a few days in a house, belonging to the Portuguese you ernor of the Island This happened during the rainy or sickly se as on - In the same house were lodged the Castain's brother, the surge on some midshiftmen I the leaft air's pervant - But in a few days after their being on those, the captain's brother; singe on & Every one to the number of seven, who had sleft in that house were taken ill and all of them died, except one, who returned botingland, in a very bad state of health. The ship I ay at an chir chow, town. by seven days, during which time; three mudship. mon, fire men and a bod, remained on those, for twelve might to guard the water carles un der the fractor ce, that the Islanders would steal Hum: all of whom were likewise taken ill, & only two excaped with life - At that line, only thore who sleft on the oregivere taken ill; no other man of the ships company wars ized with any distemper, during the ship's stay there

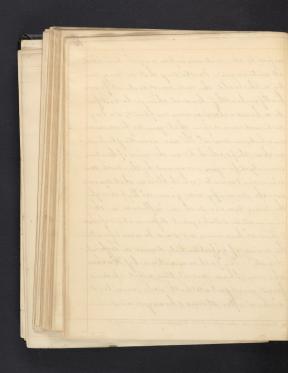
To this the on and of other to amply might be added from rain, writers, but this I fremen will be sufficient, by place in a strong point of news, the dangers of aright airen unhealth Church; the Estimation of diffusion of march of fluria, are also very much influence of by the freshere of point out ar printed. Line says, that the years

1906 toll were distinguished by the uncommon appearance of intermitting framitting from the property forms in the obvious, cause of them was, the seminal for green of of world some lasterty wind, "Her further adds" "can last wind in longland, is often a companied with a fort, which it is said to bring withit from the seat but the truth of the matter is that this wind a raises a copiens or a four from water much & all mousty or damp blaces "Morely follow, that an last wind is fell in England

by invalid, in their very bods - With

respect to the deleterious influences of the East wind, all writers a gree - Forster page that in every com try in the world the last wind is almost prover bially unhealthy beareral changes to East for duce head a ches, & nervous complaints & a long continued wind from that quarter produces an unisholes one seas on the men according to Lind. in those ships which hie in the river of Canton, are publich to ague, accasioned by the North Med winds in November which blow in that searns over the In ampy rice grounds" But though the wind, Exercise such an influence in the climination of Dubic quent depenination of these Efluria, hunicane, are said to arest for a time The course of a festiler tial disease in Tropical dimaty" This fact was noticed by Huxham who say; I have several time, noted Epidemie fevers, greatly abate both as to mimber &

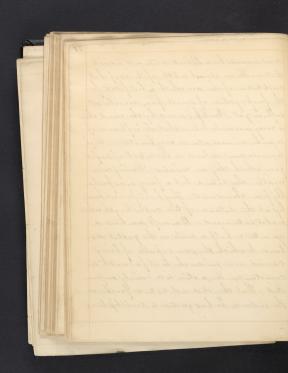
virlence after storms of heavy a wind a service to be a plan p 132 to be advent on Beau purp 31



As to the distance to which the moush poison may be carried anthors are not agreed His not improbable that much may defend on the par ticular state of the atmosphere at the time In the work to which I have just alluded . (Forster on the Atmosphere) the following question is proposed Is it positle, ch at these maybe some quality in the air at particular time, whereby A is fitter for the con vey ance of infections mot Let? That there is, Ih are no doubt, but what that particular state of the almosphere consist, in Jam not prepared to say yet cannot help suspecting that it is in some way connected with mintere- Whatrender, chisided furbable, is that in ter mitter & tremittents freewil most Extensively in Springs Autumn, the seasons, most ren a Rable for a cins-" Let it cannot be devised that we have ferres I chose prevailing Epidemically too, in the

driest seasons; have the hink with well admit

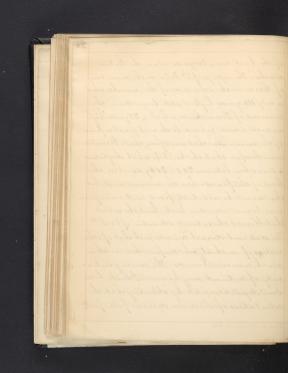
that we know almost as little of it as of that constitution of the our which is best fitted for the proposation of small por, measles or influen gal - Number carried by the wind thew is every reas on to believe that the influence of marsh marmata is very limited. Mich however must depend on the Extent of senface from which they one as haled - Diving calm weather they artend but a ferry and snotably from their som ce - They have proved hum les at the distance of two cables length when prater intervened - Bancroft mentions a gu an ter or half a mile as the greate, t distance to which they seem capable of being carried even un der the most favorable cir Cum stances - This notion is certainly emformded - That they did not at tend further in the instances he has grated is doubtless true,



but her water intervened I we are well aware of the power of this flind of absorbing these Effluria - Where they are not obliged by pape overwater their sphere of action is much more Extended - The Portine markes are served miles from Rome & get when the wind blows from that quarter it prequently fills the town with pertiferous miasmata-The Hought to which marsh affluria ascend has also been disputed - De Liste Days that Monte Mair a which is adjoining to Rome I sh are, in all the insalutrity of the neigh-Lowing country is according to Buyslack 143 yards above the level of the sea- Firsti which according to the same writer has an Elevation of 208 yards infinitely more healthy . + coording to accurate measurement communicated by M De Crong, Legga whose enhal tank seem to be out of the Touche

of the bad air is 300 yards above the Pontine marker - The village of It Felice on the mountain of lince on the other side of the markes which is only 114 yards high & still lover down the environs of Tenachina, which is 38 yards high are more I more Exposed to the malignant influence of the miasmata that and from them. It would seem therefore that the limit to which they willend is Done where between 208 & 30 by do above the level of the places where the miasms arise: but this cannot be absolutely fixed asit vaines from year byear according to the heat, the wind that blows & the intensity & duration of both a This state ment does not coincide with that of other writers of authority who confine them within much parower bounds - This seening contraniety of sentiment may however I think be in Sound do gred reconciled, by observing that the

calculations of Lind are derived from facts



occurring in setuations peculiarly adapte and only to the escape but to the difsermention of there unesholes one vapours - Much we know depends on the quantity & astent of the puttery. in materials, I in positions more circumscribed than the Portine marker the Effects would be propertionately diminished : hence we can readily/ concein the truth of the Statements made by army I mary surgeons of Iddies Stationed in the third stories of houses remainin of alm ort perfectly healthy, whils I those on the barement stories were senously attacked All a gree that the more lofty the buildings are the better; for the tenants of the upper stories not only Enjoy better he alth, but when taken ill have the disease in the mildest form mierieving the history of miamata one featime presents itself as war an Katle it is the east with which the fin to capted - Their

escape is said to be presented intially, by a thick scum forming on the surface of fonds or mouster, Even under cucumstances the most faverable to their formation - Aumerous instances of disease might be guoted from imprudently cleaning of this covering - Persons, it is said, in The most Exposed situations have autirely Escafed their deleterion, effects, from sleeping merch funder the cond of canvals. The preser. value power of trees against the invasion of this Enemy are well known - M Capan of serve, that the marshes in the Antitles are les injurious to health in proportion as they one more completely shaded by trees from the action of the sun- The neighbour in of inhabitants purtain from them no other income venuence than that which results from the vicinity of a very moist atmosphere; but when the trees are cut down I the Earth

Exposed naked to the immediate action of the So bur rays, malignant fevers begin to rage amongst the surrounding inhabitants & destroy the great export of those who had been amployed in clear ing the land - Thehapmon relates that many silvations in the United States formerly sickly have been ren dered healthy, by plant ing rows of trees between them I themiasmatic spots There facts shew that by proper precautions, much may be Effec ted in marshy districts howards obtaining protection from the baneful influence of their Exhalations - Besides the wile of interpoing a barrier of trees when practicable, cultivation of these malarious situation is proposed by Leiguson as a counter agent by their injurious Ex feels, by ay hourting the morbificaty a constant succession of a ops

of Journal Love II poss. & Forguese on the Many to Pris 100. 276 hafer and I remail to I I world-

other precaution, all ogether pers on al are also recommended by authors. The principal of these are - Never be non tine to enter the infected districts, before purise or after Sunset - Never to Inter them with an amply stomach, on this account a small quantity of food should be fuerious by bu-Ron - Jone have recommended that I mall grantities of vinous hignors or ar den & spin its should be substituted. In the propuety of this practice I cannot concur It is not Stimulation of the Stomach that is required; but something to induce the Exercise of its peculiar functions, whereby it is better able to resist the aggre pion, of morbid agents -Beside, the stimulation of these biquors is Evanercent & after this has Du brided the Systems is le / more obnoxious bothe course, of disease Attention should also be paid to diet

and dothing - As a general rule it may be re marked that whatever has a tendency to weak en or derange the healthy actions of the animal econ only, renders the system a more easy/fuer to morbid agenty- Hence there is no practice which we are called whom more loudly to condemn, than that of some misginded individuals, who led away by their own paloions, have persuaded them, elve, I would fain perguade others, that the best means of prevention, consist in the constant use of ardeal spirit, I that carried even to intoxication In this country particularly where ardent spir. it are so plenty I so cheap, such a notion cannot fail of antacting the most fatal consequences of me are called upon by Every feeling of humanity to discour toward the practice - Is preventives it has also been recommended that the dudlings should be

Do constructed, that there I hould be no windows or doors fronting the moustes that the smoke from the fires should be permitted by diffuse itself through the hours of Tir Gilbert Bland says that certain internal medicines such as bitters, aromatic, & small quantities of vinous lequors, tend to preserve the body from its bad Effects - Sir Gilbert also remarks that as fer ers produced by march Effluria do not show themselves for some days, it would be advisable to take some does of Perevian book after clearing the borrels by a fungative An Emetic I should suffere would be the In ore appropriate remedy the spices of the country (Elinis) he also remarks have also been found powerful in fortifying the body again not the influence of noxions air. This, one am on y many cir cum stances that go to prove the fruch of the general proposition, that

whenever Providence inflict, an will it is always accompanied by the remedy or the freezentire-

